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Applicant(s): McCallister, et al.

Group Art Unit: 2637

Serial No.: 10/718,507

Examiner: CORRIELUS, Jean B.

Filed: November 19, 2003

For: CONSTRAINED-ENVELOPE DIGITAL-COMMUNICATIONS TRANSMISSION SYSTEM AND METHOD THEREFOR

INVENTOR'S SUBMISSION UNDER 37 C.F.R. 1.56

I, Ronald D. McCallister, a named inventor in the above-identified reissue application, make the following disclosure pursuant to my obligation under 37 C.F.R. 1.56 to make known to the Patent Office any information that refutes or is inconsistent with a position the applicant takes in asserting an argument of patentability. I am not currently affiliated with the assignee of the application and have no interest in the application.

My disclosure concerns the May et al. prior art reference[1], which is of record in the application.

All of the pending claims of the application recite either a delay element or delaying step. The applicant argued that the May reference "does not discuss or suggest a delay element or delaying step" (Preliminary Amendment, November 19, 2003). It has come to my attention that the pending claims have been allowed based on the applicant's characterization of the May reference as not requiring that the signal be delayed. I respectfully disagree with the applicant's characterization.

The May paper teaches that you must identify the instant in time in which a signal peak occurs, and then subtract a scaled version of a fixed pulse-shape from the input signal, where the peaks of the pulse-shape and the signal have been time-aligned[2]. Since the pulse-shape extends in both directions in time from the point at which its peak occurs, the teaching clearly requires that the input signal is delayed by at least half of the pulse-shape duration. In view of the foregoing, it is clear that May's approach inherently uses a delay; in my opinion it cannot be done any other way.

The following Figure 1 graphically depicts the necessity for signal delay in implementing May's teaching.

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[1] T. May and H. Rohling, "Reducing the Peak-to-Average Power Ratio in OFDM Radio Transmission Systems," published May 18, 1998 in the Proceedings of the 1998 Vehicular Technology Conference, pp. 2474-2478.

[2] Ibid, p. 2475, col. 2, lines 39 -41 (the three equations at the bottom of the second column).

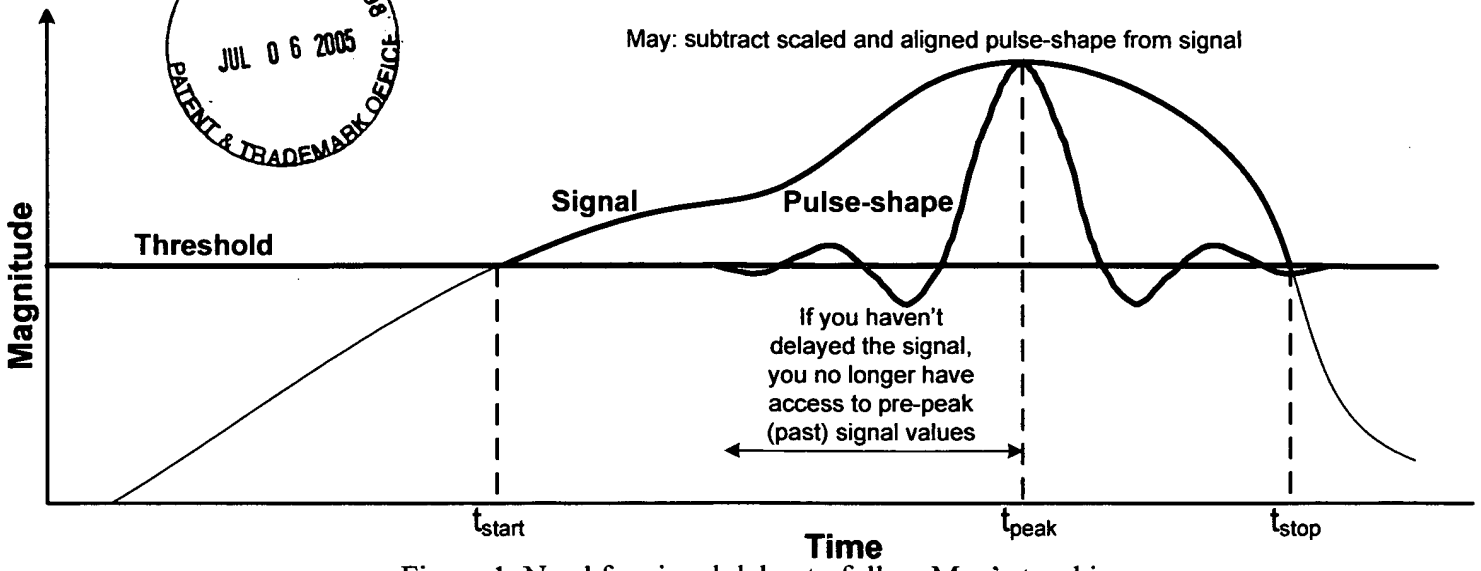

Figure 1. Need for signal delay to follow May's teaching

Figure 1 shows signal magnitude over a time interval. At time t_{start} the signal magnitude exceeds the defined threshold, and this condition persists until the signal magnitude once again drops below that threshold at time t_{stop}. The signal magnitude exhibits a peak at time, t_{peak}. May clearly teaches that the scaled bandlimited pulse-shape must be time aligned so that the pulse peak and the signal peak are time-coincident[3], the scaling defined so that the magnitude of the difference between the signal and the pulse equals the threshold at that peak instant[4]. May then clearly instructs that the scaled and aligned pulse values must be subtracted[5] from the corresponding signal values. It is impossible to follow May's teaching without the use of signal delay. In order to subtract pulse values from signal values, all required signal values must be accessible. However, at that point in time (t_{peak}) when this subtraction action is prescribed, all the signal values in the past (left of the peak instant) have already occurred. To follow May's specific instructions to subtract pulse values from ***all*** (to both sides of the peak instant) corresponding signal values, delay must be used to make sure that past signal values are still available.

Respectfully submitted,

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[3] Ibid, p. 2475, col. 2, lines 40 -41 (the last two of the three equations at the bottom of the second column).
[4] Ibid, p. 2475, col. 2, lines 41 (the last of the three equations at the bottom of the second column).
[5] Ibid, p. 2475, col. 2, lines 39 (the first of the three equations at the bottom of the second column).